

WHAT IS CLAIMED IS:

1. A motor comprising:

a stator having an iron core;

a rotor disposed in the stator;

5 a coil having a main-resistance coil and a sub-resistance coil, the main-resistance coil being wound around an outer portion of the iron core, the sub-resistance coil being wound around an inner portion of the iron core; and

insulating means for preventing withstand voltage which is caused by contact between the sub-resistance coil and the rotor when the sub-resistance coil expands due to an increase in temperature of the coil.

10 2. The motor as claimed in claim 1, wherein the insulating means comprises an insulator which is refrigerant-proof and oil-proof, the insulator being disposed between the sub-resistance coil and the rotor.

15 3. The motor as claimed in claim 2, wherein the insulating means further comprises a yarn for securing the insulator to the coil.

20 4. The motor as claimed in claim 3, wherein the yarn is made of a polyester material.

5. A motor comprising:

a stator having an iron core;

a rotor disposed in the stator;

25 a coil wound around the iron core of the stator; and

an insulating apparatus separating the rotor from the coil, the insulating apparatus preventing contact between the coil and the rotor when the coil expands during operation of the motor.

- 5 6. The motor as claimed in claim 5, wherein insulating apparatus comprises:
 an insulator having a cylindrical shape; and
 a yarn securing the insulator to the coil.

- 10 7. The motor as claimed in claim 6, wherein the coil includes a main-resistance
 coil and a sub-resistance coil, the sub-resistance coil being wound around an inner portion of
 the iron core of the stator, and wherein the insulator is disposed between the sub-resistance
 coil and the rotor.

- 15 8. The motor as claimed in claim 6, wherein the insulator comprises a
 refrigerant-proof and oil-proof material.

9. The motor as claimed in claim 5, wherein the yarn is made of a polyester
 material.